

REMARKS

Claim 3 has been canceled without prejudice or disclaimer. Claims 1 and 4 - 6 have been amended in order to more particularly point out, and distinctly claim the subject matter to which the applicants regard as their invention. It is believed that this Amendment is fully responsive to the Office Action dated December 17, 2002.

As indicated in the Office Action of May 13, 2002, claim 4 would be allowable if rewritten in independent form including all of the limitations of base claim 1. An amended claim 4, which should present the claim in allowable form, is submitted herewith.

The specification has been objected to due to certain informalities, which the Examiner deemed needed correction, as set forth in item 2, page 2 of the outstanding Action. The applicants respectfully request reconsideration of these objections.

Applicants respectfully submit that the amendments to the specification obviate the objections to the specification. Accordingly, withdrawal of the objections to the specification is in order, and is therefore respectfully solicited.

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The Examiner objects to the drawings of Figs. 6 and 7 as they are not designated by a legend such as "Prior Art". The applicants respectfully submit herewith proposed corrected drawing sheets for Figs. 6 and 7 marked in red, along with a Request for Approval of Drawing Changes.

The applicants respectfully request that the proposed drawing corrections submitted herewith be approved by the Examiner, and that the outstanding drawing objections be withdrawn.

As to the merits of this case, first, claims 1, 3, 5, and 6 are rejected under 35 USC §102(b) as being anticipated by German DE 3437247. The applicants respectfully request reconsideration of this rejection.

DE ('247) describes a seal assembly which has a pair of seal rings (38) and (39) having lip portions (48) and (49) respectively, and a load seal ring (33) compressed and inserted between the pair of seal rings. The seal assembly is symmetric with respect to a radial-direction line passing through the center of the seal assembly. The Examiner alleges that an inner-diameter controller body is shown in Fig. 5 at numerical indicator (47), and a circumferential groove is shown in Fig. 4.

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The applicants respectfully submit, however, that in the seal assembly of DE ('247), the "load seal ring" (33) does not contact the alleged inner-diameter controller body (47) as in the present invention as shown in present Figs. 1A, 1B, and 3-5B.

In view of that distinction, the applicants have amended claim 1 to include the feature of claim 3 and to more clearly define the seal assembly as having the load seal ring contacting the inner-diameter controller body. Accordingly, claim 3 has been canceled and claims depending from claim 3 are amended to remove the dependency on claim 3.

Accordingly, the withdrawal of the outstanding anticipation rejection under 35 USC §102(b) based on German DE 3437247 is in order, and is therefore respectfully solicited.

Secondly, claims 1 and 2 are rejected under 35 USC §102(b) as being anticipated by Hatch (U.S. Patent No. 3,241,843). The applicants respectfully request reconsideration of this rejection.

Hatch describes a seal assembly which has a pair of seal rings (28, 28). The Examiner alleges that lip portions are shown in Fig. 3 and that components (23) and (24) correspond to the load seal ring and that component (33) corresponds to the outer-diameter controller body.

With due respect to the Examiner, it appears as though the outstanding Action mischaracterizes the seal assembly of Hatch, as components (23) and (24) are not described as being resilient and therefore they would not exert reaction forces on the seal rings (28, 28) as defined in the claimed invention. Also, component (33) is described at col. 4, lines 16-49, as being a closure strip formed from a cellulose band with sufficient strength to hold the rings in assembled condition prior to and during installation. The band is said to be broken during operation and therefore could not provide the defined displacement controller as defined in the claimed invention.

In view of the above, the withdrawal of the outstanding anticipation rejection under 35 USC §102(b) based on Hatch (U.S. Patent No. 3,241,843) is in order, and is therefore respectfully solicited.

Thirdly, claims 7-10 are rejected under 35 USC §102(b) as being anticipated by Boggs (U.S. Patent No. 3,492,054). The applicants respectfully request reconsideration of this rejection.

Boggs describes track hinge joints with rotating bushings which have a pin (13) inserted through links (11, 12) a bushing (18) immobilized on one link (12), another bushing (17) on the side of a sprocket, and a seal assembly. The seal assembly has seal rings (24, 24). The Examiner alleges that the seal rings have lip portions, however none appear to be shown. Also, the

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Examiner alleges that components (23, 23) correspond to the presently claimed load seal ring (2); however components (23, 23) are described at col. 3, lines 2-10 as being of metal.

Again, with due respect to the Examiner, it appears as though the outstanding Action mischaracterizes the Boggs reference as a metal load seal ring would not provide a pressure for a lip portion against a radial-direction wall, as defined in the present claimed invention.

In view of the above, the withdrawal of the outstanding anticipation rejection under 35 USC §102(b) based on Boggs (U.S. Patent No. 3,492,054) is in order, and is therefore respectfully solicited.

Lastly, claim 11 is rejected under 35 USC §103(a) as being unpatentable over Boggs in view of Johnson et al. (U.S. Patent No. (5,069,509)). The applicants respectfully request reconsideration of this rejection.

Boggs is discussed above. Johnson et al. describes an endless track chain with a rotatable sleeve which has a dust seal ring (114) disposed in an outer peripheral side of a seal assembly. Johnson et al., however, does not provide the deficiencies in disclosure discussed above in relation to the rejection of claims 7-10, in view of Boggs. Claim 11 depends from one of claims 7 to 9, and the applicants' above comments on Boggs with respect to claims 7-9 are similarly applicable.

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In view of the above, even if, *arguendo*, the teachings of Boggs and Johnson et al. can be combined in the manner suggested by the Examiner, such combined teachings would still fall far short in fully meeting the applicants' claimed invention. Thus, a person of ordinary skill in the art would not have found the applicants' claimed invention obvious based on Boggs and Johnson et al., singly or in combination.

Accordingly, the withdrawal of the outstanding obviousness rejection under 35 USC §103(a) based on Boggs in view of Johnson et al. (U.S. Patent No. (5,069,509)) is in order, and is therefore respectfully solicited.

In view of the aforementioned amendments and accompanying remarks, claims, as amended, are in condition for allowance, which action, at an early date, is requested.

If, for any reason, it is felt that this application is not now in condition for allowance, the Examiner is requested to contact the applicants' undersigned attorney at the telephone number indicated below to arrange for an interview to expedite the disposition of this case.

Attached hereto is a marked-up version of the changes made to the claims by the current amendment. The attached page is captioned "Version with markings to show changes made."

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In the event that this paper is not timely filed, Applicants respectfully petition for an appropriate extension of time. Please charge any fees for such an extension of time and any other fees which may be due with respect to this paper, to Deposit Account No. 01-2340.

Respectfully submitted,

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PATENT TRADEMARK OFFICE

Enclosures: Version with markings to show changes made
Notice of Appeal
Petition for third month Extension of Time
Request for Approval of Drawing Corrections w/Figures 6 and 7 marked in red ink

IN THE SPECIFICATION:

Please amend the paragraph beginning at page 5, line 21, as follows:

The seal assembly according to the first aspect of the invention may further comprise an inner-diameter controller body [32]33 for controlling the displacement of the load seal ring 2 in the periphery inner direction.

Please amend the paragraph beginning at page 5, line 25, as follows:

In this case, the displacement of the load seal ring 2 in the periphery outer direction can be controlled by the [inner-diameter]outer-diameter controller body 32, and reaction forces of the load seal ring 2 in the axially-outer direction can be securely exerted on the lip portions 23 and 23. In addition, the inner-diameter controller body 33 functions as a spacer disposed in an inner-diameter side of the seal assembly to thereby allow a mounting portion of the seal assembly to easily be secured.

Please amend the paragraph beginning at page 6, line 9, as follows:

In the seal assembly according to the first aspect of the invention, one of the seal rings 1 and 1 may comprise the outer-diameter controller body 32 for controlling the displacement of the load seal ring 2 in the periphery outer direction, and the other one of the seal rings 1 and 1 comprise the inner-diameter controller body [32]33 for controlling the displacement of the load seal ring 2 in the periphery inner direction.

IN THE CLAIMS:

Cancel claim 3 without prejudice or disclaimer.

Please amend claims 1 and 4 - 6 as follows:

1. (Amended) A seal assembly comprising:

a pair of seal rings (1) and (1) individually comprising lip portions (23) and (23) disposed such that each of said lip portions (23) and (23) protrudes in [a direction opposing] an axial direction opposing the protruding direction of the other lip portion; [and]

a load seal ring (2) compressed and inserted between said seal rings (1) and (1), said load seal ring (2) exerting reaction forces on said lip portions (23) and (23) outwardly in the axial direction; and

an inner-diameter controller body (33), in contact with said load seal ring, for controlling the displacement of said load seal ring (2) in a periphery inner direction.

4. (Amended) [The] A seal assembly [as defined in Claim 1] comprising:

a pair of seal rings (1) and (1) which is individually comprised of lip portions (23) and (23) disposed such that each of said lip portions (23) and (23) protrudes in a direction opposing an axial direction; and

a load seal ring (2) compressed and inserted between said seal rings (1) and (1), said load seal ring (2) exerting reaction forces on said lip portions (23) and (23) outwardly in the axial direction, wherein

one of the said seal rings (1) and (1) comprises said outer-diameter controller body (32)

for controlling the displacement of said load seal ring (2) in the periphery outer direction, and the other one of said seal rings (1) and (1) comprises said inner-diameter controller body (32) for controlling the displacement of said load ring (2) in the periphery inner direction.

5. (Amended) The seal assembly as defined in one of claims 1 [to], 2, and 4, wherein said load seal ring (2) comprises a circumferential groove (27) that tolerates axial-direction compression.

6. (Twice Amended) The seal assembly as defined in one of claims 1 ,2 and 4, wherein a cross section of said assembly is symmetric with respect to a radial-direction line passing the center thereof.